File No. PWD 86 MMI 66

MYSORE GOVERNMENT SECRETARIAT

Notes/Correspondence/Collection

Department PWD Section Major Irrigation

Subject :— History of irrigation systems in the Krishna system of Upgrading

Earlier References :—

Later References :—

7209 HPRD 7935 FS 8221 8292.

(Classification A/B/C)

Notes Pages.....

Correspondence Pages.....

For/Not for Section note Book

To be destroyed after.....

Under Secretary to Government

Writing of history of State Projects

Mysore Government Secretariat

Reg File No. of 195 . [App. F. III 2

Serial No.

Letter no. 15-1/68-TMIS dated 10.9.68 from the Chairman, CWPC on the subject.

Letter no. 130/P dated 8.10.68 from the CE(I) NR.

1) Submitted for perusal. Please see the letter of the Central Water & Power Commission at Pages 1 to 6 CF. It is stated that the Ministry of Irrigation & Power have desired that detailed history of the Construction of all major irrigation and power projects costing Rs 20 crores and more which have been recently completed or are likely to be completed in the 4th Plan, be compiled. For this purpose it is suggested that a separate cell be created, employing additional staff, comprising of a Junior Engineer Assistant and supporting technical and office staff and an estimate of expenditure on account of the additional staff to be employed be specifically indicated, for reimbursement by the Govt of India. It is also requested that necessary proposals giving estimated expenditure, the period in which the reports will be completed, names of projects which are to be taken up for the preparation of the report etc be sent. It is further suggested that a Senior Officer be nominated to co-ordinate the work and to furnish periodical reports about its progress.

2) The letter of the CBIP and its

Note.—Contn. Sheet

Writing of hist. ory of State Projects -

Reg

File No. of 195 .

Mysore Government Secretariat

Serial No.

enclosures at Pages 4 to 19 CF Recommending the appointment of Sri. M.C. Sampath Iyengar Ex-Adviser, Planning and Investigations, Neyveli State Electricity Board, for the purpose of writing the history of the State irrigation and power projects in the State, may please be perused in this Connection.

3) The CE States that as the Regular Staff is Completely engrossed in the execution of the projects, they find little time to complete the in bringing the Records up-to-date. He therefore recommends that the offer made by Sri. M.C Sampath Iyengar be considered favourably on terms and Conditions mutually acceptable.

4) Before considering the Recommendations made by the CE(D)S, it is desirable to obtain details regarding the projects for which the history has to be written, estimated expenditure for the appointment of Staff, additional Staff required, period with in which their work can be completed etc. Therefore if approved Copy of the Govt of India's letter will be forwarded to all the CE's (CE(D)S, CE(D)M CE(HECP) for Sending a report. For order.

5) The only projects for which history may have to be written are the Krishnarajasagar, Byndoor Reservoir and Tungabhadra

WD 04700—GPB—PZS—8,00,000—1958

Serial No.

Project, which are almost completed. The history of Ghataprabha, Malaprabha and Kabini will have to be written when these projects are completed.

6) In the case of Bhadra, Govt had sometime back sanctioned a Spl. Commission for this work and the Report prepared by this Office, is with the CE. and what is perhaps required is a little pruning and shaping of the Report.

7) In the case of Tungabhadra the Report that could be written could be only of the left side, since the entire Records of the right side are with the TB Board and Andhra Pradesh. And even for writing the Report of the left half of Tungabhadra a correct person could be, one who was associated and was worked in that project. The only Officer who satisfies this requirement and is working in Mysore State is Sri. GK. Rajan SE. CITB.

8) In the case of Krishnarajasagar there are a few senior Officers who can write a Report on this project. And I am not sure if any exact and authentic Report could be written now except from memory of the Officers Concerned, since the Records ... involved could be too old and

Serial No.

and difficult to obtain.

9) In the writing of the report of the Inspection or Investigation, it could be indeed more desirable to obtain articles on the various important works like Reservoir Design, Rehabilitation, Canal System, Major Cross Drainage works, etc by the officers who actually were associated with those items of work and then Compile them into a book furnishing the missing links from the office records by the CE of the project now working who should be given a handsome Cash for this work.

10) In this Context it could be very much desirable that the officers at present working in our projects are made to devote some time to write down articles on important works and encourage them to publish it in the "ENGINEER magazine got out by CE IP (South) or send it for publication to any Engineering journal. Such a procedure could always enable in the future to Compile these articles and publish the history of the project.

11) All the above is what could be done. But in the present Context

WD 04700—GPB—PZS—8.00,000—1958

WD 01050—GPB—8,00,000 13-12-65

what is most important is the financial implications involved for all could and done the publication will not be sold and will be only a Govt publication to be retained in our office records. Therefore as pointed out in para 4, we may in the first instance obtain the financial implications and also enquire from CE(S) as to the present stage of Barrage Project report.

DS
for PW

10/10/68
M. GHANNAPPA
for S.E. (Irrgn.)

Secy. PWD. 11/+
No 7209 Date

12. Government of India in their letter No.15-1/67 TM&S dated 10th September 1968 vide page 1 c.f. has indicated that a history or a report on all the major irrigation and power projects costing more than Rs.20 crores likely to be completed or completed recently may be compiled, supported by technical data and inclusive of all details from the reconnaissance stage to the final completion of the projects.

Flag 'A'

13. Towards this purpose they have suggested creation of a separate cell or a staff comprising of a Senior Engineer, and expenditure incurred thereon will be reimbursed by the Government of India for preparation of such reports. In this connection, the major projects that have been completed so far are the Krishnarajasagar,

Bhadra Project and Tungabhadra project which have reached a stage of completion and yielding benefits under it. Except K.R.S. other projects are costing more than Rs.20 crores.

The other major projects under execution are 14
Hemavathi in the Cauvery basin, Malaprabha, Ghataprabha and Upperkrishna in the Krishna basin. Some of the medium projects are also undertaken in both the Cauvery and Krishna basins. Compilation of the details commencing from the investigation to the completion stage are yet to be undertaken. In preparing these reports, the teething troubles encountered therein, the construction difficulties met with, organisational and financial impediments, are necessary to be brought under one complete set up for every major project so that not only the technical personnel but also the administrative and others interested in undertaking such works are fully benefitted from the experiences noted therein. It is needless to emphasise the importance of such compilation of reports in time and that too as soon as the project is completed so that important points are not lost sight of and every minute detail is pictured in the report. Unfortunately, the technical bulletins and pamphlets apart from the official reports on these projects which are available, are not brought under one volume either for Krishnaraja-sagar or Bhadra or Tungabhadra projects. Many of the officers who were associated with the projects either have retired from service or are no longer living. In this connection, the recommendations of the Chief Engineer (South) vide page 7 C.F. is for kind perusal.

Sri M.C.Sampath Iyengar who was formerly 15

WD 01050—GPB—8,00,000 13-12-65

Superintending Engineer in Mysore P.W.D. and later on worked in various capacities with other State Governments viz., Assam and Andhra Pradesh has offered his services for this work of compilation of reports. Prior to his retirement in Mysore P.W.D. he had association with Krishnarajasagar works. It is therefore suggested that his services may be utilised on a contract basis for a period of one year to compile the history both on Krishnarajasagar as well as Bhadra projects.

16 Regarding power Sri M.V.A.Setty is compiling his report on Sharavathi and there may not be any further additional assistance needed towards this compilation. But as regards irrigation projects, the existing officers may not find enough time to compile these reports and keep it uptodate and it may be essential to create a special establishment for this purpose. The proposal suggested ~~xxxx~~ vide 'A' above may be accepted in principle. The remuneration that may be paid to him can be fixed as a contract amount as in the case of fees payable to the Board of consultants for any specific work allotted to them.

17 He may have to be given the assistance of one stenographer for this purpose for a period of one year. Assistance of technical staff for preparation of drawings may be required. Concurrence of Finance Department will be obtained after the above proposal is agreed to.

Chief Min. No. 3631 Date 20/10/68. and they can be made available from the existing staff in the Zonal offices.

PWS 7209

Secy. PWD. Date No

(G.V.Venkata Ramu) 15/10
Secretary, PWD.

Minister for PWD

Chief Minister (18) Sri. M.C. Sampath Iyengar ~~seems to be~~ seems to be suitable for this work. He may be appointed on contract basis.

Min. P.W.D. N.. 821 Date 15/X

C-M. (19)

K. LAKKAPPA 20/10/68
Min. for Public Works.

(VEERENDRA PATIL) 20/10
Chief Minister.

Secy/PWD

DSS (20) 21/10

21

Secretary gave this file to work up the remuneration aspect of the contract for financial concurrence. The terms suggested by Shri Sampath-Iyengar are at page 18 c.f. He has suggested a total sum of Rs.27,000/- at the rate of Rs.1,500/-p.m. plus a bonus of Rs.5000/- after the successful completion of the work in addition to his pension which he is drawing at present. The demand is rather high. Government of India's concurrence has to be taken as they are to re-imburse the expenditure.

22.

In the case of the Board of Consultants the remuneration fixed is as follows;

Each member will be paid a total fee of Rs.150/- for actual days of work including study and examination of connected papers subject to the provision that the total fee received in a year does not Rs.12,000/-. It may not be possible to compare fully the Consultants job with the type of job that is being entrusted to Shri Sampath Iyengar which is more a research-cum-library work. A total remuneration of Rs.20,000/- in addition to pension may be a reasonable sum to be offered for the work We are also giving him the staff as proposed in para 17 and conveyance for the work and office accommodation.

23.

He has asked for monthly payment. For a job-work like this monthly payment may not be correct. We may have to draw up a schedule of items in parts and on completion of each part a portion of the total remuneration should be paid. Each part on completion and presentation shall be the property of Government These aspects may have to be discussed with

S. | Subject: History of Irrigation Project in the State writing of - Regarding | File No. PWD 36 MMI 68.

Shri Sampath Iyengar while drawing up the contract.

R 4/11

Secy

24) As suggested in Para 22, A may kindly be agreed to as the nature of work to be done involves Study of previous references Correspondence and Compilation over a period of 18 months. The remuneration payable is reasonable and the staff as proposed may kindly be accepted as the assistance of a Stenographer is quite essential

For kind Concurrence

Secy. PWD. 5/11 No 7938 Date

7.5

5/11

G. V. VENKATA RAMU,
Jt. Secy. P.W. & Elec. Depts.

Secy., F.D. No 6690 Date 5/11

Finance Department

25) According to para 2 of the Govt. of India Letter under consideration, a separate cell consisting of a Senior Engineer, Assistants and supporting Technical and other staff has to be created. The Govt. of India have also desired that an estimate of expenditure on account of additional staff to be employed specifically

WD 01050—G?B—8,00,000 13-12-65

for this purpose may be prepared and sent to them for their consideration. As the Govt. of India is to ~~be~~ reimbursed the entire cost on account of this work, it may not be desirable, as suggested in para 17 n.s., to seek for the assistance of Technical staff working in the various offices even when they attend to their normal work. at present. While F.D. has no objection to the remuneration proposed to Sri Sampath Iyengar, it suggests that an estimate of expenditure on account of creation of the cell, as suggested by the Govt. of India themselves, may be prepared and sent to them for their approval. The work may be taken up only after the approval of the Govt. of India is received.

A.

6/11

M. VEERARAJURS,
Finance Secretary to Government.

D. S. PWD (Ser)
No 9247 Date 7/11

6690/FS

Secy. P.W.D.)

Secy is in Tour.
Dep. 6/11/68
DS(S)

Pl. submit after the Secy returns.
7/11

RWS 7938

D.S.(S)
RWS(T) 11/11.

11/11/68

26

Please see paras 18-25 ante. The F.D., even though they have agreed to the remuneration proposed to be paid to Sri Sampath Iyengar, have suggested that in the first instance an estimate of expenditure on account of creation of cell as suggested by the Government of India

Secy. PWD. Dated 11.11
No 7986.

be sent to Government of India for approval. In their letter dated 10-9-68 at page 1/c.f., Govt. of India have indicated that reports of projects costing Rs.20 crores or more which have been recently completed or are likely to be completed in the Fourth Plan may be prepared. ~~[According to this requirement, Bhadra and Tungabhadra Project Reports alone will be eligible for reimbursement and the report of K.R.S. may perhaps be not eligible for such reimbursement from Govt. of India.]~~ It may, therefore, be desirable to obtain from the Chief Engineer, an estimate of expenditure on account of the creation of cell for the preparation of Project Reports as suggested by Government for the writing of the reports of the Tungabhadra, Bhadra and K.R.S. Keeping also in view that Sri. Sampath Iyengar aids in Connection with this work.

DS / for SW

4 / 12/x1

27 For the present the assignment that is proposed to be given to Shri Sampat Iyengar is regarding writing the history of K.R.S. and Bhadra.

28 Regarding Tungabhadra we may have to make some other arrangement. Perhaps there is no objection to send the proposal about Shri Sampat Iyengar in advance to the Government of India, stating that estimate about the

WD 01050—GPB—8,00,000 13-12-65

entire scheme will be sent separately.

15/11

R. R. NAIR,
Deputy Secretary (Services),
P.W.D. and Electricity Departments.

Secy

Secy. PWD.
No. 822 Date 15/11

2) If the cost of K.R Sagar project is less than Rs 20 crores, then the G.of.S may not agree to reimburse the expenditure proposed to be incurred on the preparation of the history of K.R. Sagar. Moreover, it is more than thirty years since the project was completed. This project will not therefore be entitled to claim any reimbursement of the expenditure on the preparation of the history of the project. I am not sure if it is worth while at such a distant date, to make any attempt to prepare the history, as most of the material required for the purpose may not be available. However if an attempt has to be made, it should be a subject other than one contemplated in G.O 1st cited.

M. G. S. | Subject: | File No.

Secy. PWD. Date
No

As regards the creation of the cell for preparation of history of the projects like Bhadra, Tunga Bhadra & sup also the C.E (Inv. HEP) may be consulted.

J.3.
DS(S) RO 18/11

Ch
17/11/62

3b) Para 14 is for perusal. As the development & granting of rights are written & re-written after a late date for the benefit of not only "historians" but for future citizens, it is suggested again re-consideration that Completed long back report on projects even though would definitely prove to be a Valuable record for every technical man and administrator. then

"Baba" Ex. Engr of Metter has compiled an authoritative book on "Metter project" in Madras State & is the only printed record available on that project. It is a very useful & illuminating report Unfortunately on projects in Mysore state except for "Vani-Vilas Sagar", no report is available

C-E (Inv) HEP is fully burdened into other works & will not be able to do any justice. This work is time consuming laborious

WD 01050—G°B—8,00,000 13-12-65

avid harsh on "patience". Only few who could be devoted to such work & with extraordinary zeal can succeed.

If G.O.I. is not willing to finance for "K.R.S repair". State Govt may kindly agree for this expenditure as it is not a waste and a report on KRS which has passed through various stages of difficulties will reveal an interesting & educative picture for all times to come.

In future engineers in charge of all major & medium works after they have charge of construction must be compelled to place on record the history of the work during their tenure of office, so that a written record is available for reference and continuity.

Secy)

18/11

31) pl. discuss.

CE

19/11

32) Discussed. CE (Inv) will have to suggest the organisation for the cell as suggested in G.O.I's letter under P. 1-C/f and defined in G.O.I's letter under ref. 999 when addressed for financial assistance.

21/11

DS(S) RP

28/11

USE(T).

9111 29/11/68

XXX

29/11

D. S. PWD (Ser) No 9609 Date 18/11

Secy. PWD. Date 19-XI No 8292.

D. S. PWD (Inv) No 16188 Date 25.11.68

M. G. S.	Subject:	File No.

Letter no. 15-1/68/TMR/ dated 12/11/68 from the Chairman, CWPC on the subject.

33) Submitted for perusal. A draft to CE. Investigation of Projects and an interim reply are put up.

29/11

34)

29/11

ISSUED

Dated 28.11.68 ab

Continued in Volume II

No.15-1/68.TM&S
Government of India,
Central Water and Power Commission
(Water Wing)
* * * *

Bikaner House, Shahjehan Road,

New Delhi, the 10 September, 1968.

To

11. Shri Chandappa Patel,
Secretary to the Govt. of Mysore,
Public Works & Electricity Deptt.,
Bangalore.

Subject:- HISTORY OF MAJOR PROJECTS, IRRIGATION AND POWER SECTOR - PREPARATION OF.

Sir,

The Ministry of Irrigation and Power have desired that detailed history of construction for all major irrigation and power projects costing Rs.20 crores or more which have been recently completed or are likely to be completed in the Fourth Five-Year Plan may be compiled. All necessary details including supporting technical data in respect of construction of such projects from the reconnaissance stage to the final completion of the projects, is to be collected and included in the report. A copy of information and data considered necessary for compilation of the Report is enclosed for guidance.

2. For the purpose of completion of such reports, it is suggested that you may consider creating a separate cell employing additional staff comprising of a Senior Engineer, Assistants and supporting technical and other staff. An estimate of expenditure on account of the additional staff to be employed by you specifically for the purpose of preparation of such reports may please be indicated for consideration by the Government of India for reimbursement.

4632

D.S. PWD (Secttt.) No 14731/13/D1S(T)/13 US(T)

3. I am to request that you may kindly send proposals giving estimated expenditure and the period in which the reports will be compiled. The names of the projects which are to be taken up for the preparation of History of construction may also be furnished. I am also to request that a senior officer may be nominated to coordinate this work and to furnish periodical reports about its progress.

Kindly acknowledge receipt of this letter.

Yours faithfully,

(G.A. NARASIMHARAO)
CHAIRMAN, CW&PC.

SECRETARY TO GOVERNMENT
No. 1890
Date 12 SEP 1968
PUBLIC WORKS & ELEC. DEPT.

P. Dasgupta 10/9/68 US(T)

INFORMATION AND DATA REQUIRED FOR RIVER VALLEY PROJECTS.

1. Necessity of the Project.

2. A site plan showing the location of the project and the area served by it. Gravity flow and lift irrigation should be shown in different colours. Main and branch HV transmission lines may also be shown.

3. Scope and targets of the project and the extent of various benefits and services to be rendered by the project.

4. a) Early history of the project.

   b) When was the project first approved and its original estimated cost.

      Project estimate revisions, if any, and revised estimated costs with dates of approval of revised estimates and reasons for each revision.

   c) Official dates of starting and completion of the project. Who laid the foundation-stone and who inaugurated the project?

   d Any important events connected with the history of the project

5. a A brief description of the principal features and components of the project.

   b Reasons for adopting the particular types of the principal structures such as the dam, power houses, spillway, canal structures etc.

      For the dam, it may be mentioned as to why a gravity section or an arch section was adopted. Also as to why it was built in earth, or rock fill, or concrete or masonry.

      For power houses, it may be mentioned as to why the power house was built underground, if it has been built underground, mention may be made of the types of turbines and generators as also of transmission voltage, etc.

      Mention may be made of considerations leading to fixing the capacity of the spillway and how that capacity has been provided for, as also reasons for adopting the particular type of spillway and energy dissipating devices. For canal structures, any distinctive design features may be particularly mentioned.

      Similarly for reservoirs, general remarks regarding their capacity, size, life, etc. may be given.

... 2

6. Brief remarks regarding any other connected structures such as tunnels, coffer dams, etc. not included in the above.

7. A brief description of the organisation for carrying out the project works:

(a) During the early stages of the project.
(b) During the main construction period.
(c) After completion of the construction work.

Notes:- If a control board or a similar body was constituted details of its constitution and functions should be given.

8. Agencies employed for the construction work for the various components of the projects. It should be specifically mentioned as to whether the work was done on contract basis or departmentally and why?

9. A brief description of the investigations carried out and data collected for preparing the project.

Mention may be made of any aerial surveys, Ground surveys, sub-surface explorations and hydrometeorological and other data connected with the project. Any snags or noteworthy bottlenecks should be particularly mentioned.

10. Research studies and model experiments.

Mention may be made of the research stations where the studies were carried out and with what results?

11. Construction work:

a) Distinctive features of the particular plant lay-out adopted for the project should be described briefly. A plan of the plant lay-out should be included. It should also be mentioned as to what components of the construction plant were obtained from abroad and which components were manufactured in India, as well as their respective costs.

b) Any noteworthy difficulties encountered during construction and how they were resolved.

A brief description of the auxiliary structures required for construction work should also be given.

c) Mention should be made of any serious accidents which occurred during the course of construction.

d) Particular mention should be made of any changes introduced in the plan of work or the mode of execution of work during the progress of the construction operations and the reasons for making such changes.

... 3

12. a) Project costs may be given in a tabular form showing the estimated and actual costs of the various components of a project. Reasons may be given for any substantial variations between the estimated and actual costs.

b) Estimated and actual quantities and unit rates for important items of construction work such as plain concrete, stone masonry, reinforced concrete, rock cutting, grouting, etc. etc. Information regarding quantities and unit rates should be given separately for the foundations and for the main body of the structures.

c) Any noteworthy measures that were specifically taken in order to effect economies in construction costs, and with what results?

13. Instrumentation, giving a brief description of the instruments installed and the observational data collected. Mention should be made of any conclusions drawn from such data.

14. Benefits from the project as envisaged and as actually realised under the following heads:-

(a) Irrigation: flow and lift

(b) Power

(c) Flood control

(d) Navigation

(e) Industrial development

(f) Water supply for any town or city

(g) Fish culture

(h) Recreation

Reasons for any substantial shortfalls should be indicated.

15. Future prospects of the project - brief remarks.

16. Description of the project. A brief description under the following heads may be given covering all the essential and noteworthy features.

(a) Extent of the area which would be submerged after the construction of the dam and any noteworthy details thereof such as area under crops, forest area, towns, villages, etc.

(b) Pattern of rehabilitation of oustees.

(c) The extent of area benefitted by the project Gross area, culturable commanded area, project intensity of irrigation, full supply factors etc.etc.

(d) Types of main crops to be irrigated and approximate crop valued at current rates.

17. A description of the principal structures of the project,

(a) The dam, its section, length, etc.

(b) Surplussing works and spillways.

Details may be given of the regulation gates, etc. employed.

(c) Trash racks.

(d) Outlet works.

(e) Any scouring works.

(f) Inspection facilities.

(g) Fish passes.

(h) Measures for dissipating energy.

(i) Any other auxiliary or subsidiary works connected with the dam not included in the above.

(j) Power houses and a brief description thereof.

(k) A brief description of the weirs and barrages included in the project.

(l) A description of the canals constructed under the project, their head regulators and any important works such as drainage-crossings, aqueducts etc.

18. Operation of the project.

Brief remarks may be given regarding:

(a) Regulation of water supplies.

(b) Silting of reservoir. Mention may be made of the actual rate of silting, if available.

(c) Evaporation losses and measures taken to reduce them.

(d) Sweating or leaks below the dam and measures taken to reduce them.

(e) Seepage and regeneration.

(f) Settlement, if any.

(g) Anti-malaria measures adopted, if any.

(h) Any changes noted in the sub-soil water-levels and other hydrometeorological data.

19. Engineering Statistics:-

(a) Water inflow data (maximum design flood)

(b) Reservoir

(c) Dam

(d) Weirs.

(e) Canals.

(f) Power Houses. (g) Transmission lines.

(h) Navigation works, if any.

Care should be taken not to omit any important engineering dimensions and details.

(i) The nature of protection and water proofing of the upstream and downstream of a dam or weir.

(j) Provision for dealing with seepage and drainage water.

(k) Means of securing water tightness of the foundations of the dam (mention any core walls, etc.)

(l) Construction joints.

(m) Maximum pressure on foundations.

(n) Measures adopted for preventing or counteracting uplift pressures.

20. Financial data. Annual capital outlay and sum at charge, estimated and actual (if available) for the first 20 years.

Mention should be made of any levies made in connection with the project such as a betterment levy. Specific mention should be made as to whether the work is expected to be productive or unproductive.

21. Important and representative photos of the works connected with the project should be supplied. The number need not exceed 8 or 10 photos for each project.

22. Representative cross-sections of the dam, spillway and appurtenant works, as well as a general plan of works.

1

CONFIDENTIAL.

GOVERNMENT OF MYSORE.

Office of the Chief Engineer, P.W.D.,
Irrigation (South)
No.63, Palace Road, Bangalore-1.

No. 130/P Dated 8-10-1968

To

The Secretary to Government,
Public Works & Electricity Department,
"Vidhana Soudha",
Bangalore-1.

Subject:- Writing of history of State Projects.

Reference:- Letter dated 10-9-1968 from Shri M.C.Sampathiengar, B.E., Ex.Adviser, Planning and Investigations, Assam State Electricity Board.

***

Sir,

Shri M.C.Sampathiengar, who was Adviser, Planning and Investigations and Hydro-Electric Projects in the Assam State Electricity Board and since retired has addressed me and vide copy of his letter enclosed along with its accompaniments requesting for employment under the State Government as a Special Officer for writing the history of State Projects. Shri M.C.Sampathiengar has given full details about the work done by him in the past as well as other relevant details in the enclosure.

It is very desirable that an historical record of State Irrigation and Power Projects is brought up-to-date and the Central Government have been urging for maintenance of such exhaustive records for quite sometime in the past. But unfortunately there is no continuity or sustained application in the maintenance of such records. The regular staff employed on Projects is completely engrossed with the execution of the Projects and find very little time in bringing the records up-to-date particularly about completed works. I, therefore, recommend that the offer made by Shri M.C.Sampathiengar to write history of the State Projects may be considered favourably and on terms and conditions mutually acceptable.

Yours faithfully,

Encls:- Letter of Mr.Sampathiengar along with its accompaniments.

Chief Engineer, PWD.,
Irrigation (South)

(d) Sweating or leaks below the dam and measures taken to reduce them.

(e) Seepage and regeneration.

(f) Settlement, if any.

(g) Anti-malaria measures adopted, if any.

(h) Any changes noted in the sub-soil water-levels and other hydrometeorological data.

19. Engineering Statistics:-

(a) Water inflow data (maximum design flood)

(b) Reservoir

(c) Dam

(d) Weirs.

(e) Canals.

(f) Power Houses. (g) Transmission lines.

(h) Navigation works, if any.

Care should be taken not to omit any important engineering dimensions and details.

(i) The nature of protection and water proofing of the upstream and downstream of a dam or weir.

(j) Provision for dealing with seepage and drainage water.

(k) Means of securing water tightness of the foundations of the dam (mention any core walls, etc.)

(l) Construction joints.

(m) Maximum pressure on foundations.

(n) Measures adopted for preventing or counteracting uplift pressures.

20. Financial data. Annual capital outlay and sum at charge, estimated and actual (if available) for the first 20 years.

Mention should be made of any levies made in connection with the project such as a betterment levy. Specific mention should be made as to whether the work is expected to be productive or unproductive.

21. Important and representative photos of the works connected with the project should be supplied. The number need not exceed 8 or 10 photos for each project.

22. Representative cross-sections of the dam, spillway and appurtenant works, as well as a general plan of works.

Copy of letter dated 10-9-1968 from Shri M.C. Sampathiengar, B.E., Ex.Adviser, Planning and Investigations, Assam State Electricity Board, No.9, Fifth Main Road, Malleswaram, Bangalore-3 addressed to Shri I.M. Magdum, Chief Engineer, PWD., Irrigation (South) Bangalore.

***

Subject:- Writing of history of big irrigation and power projects of the country with a view to increasing employment opportunities for engineers.

...

I have been informed by Shri K.G.R.Iyer, Joint Secretary, Ministry of Irrigation and Power, New Delhi in his D.O.No.2(19)/68 Coord dated 24/25th July 1968 as under:-

> " ..... For your information, I might mention that recently we have addressed the State Governments requesting them to consider the question of taking up this work which will also provide some employment opportunities for unemployed engineering graduates and diploma holders.
>
> You may kindly correspond on the subject direct with the State Government ....."

In this connection, I wish to inform you that my contract with Assam Government is over and I am now at Bangalore available for this work.

You are probably aware that while in service in Mysore P.W.D. I attempted to write the hostory of Krishnarajasagar Project, but as my other official duties did not permit full attention to this work, I was able to bring out only a book on Krishnarajasagar Sluices and this has been published by Mysore Government in the Year 1952. Now that I am free, I am willing to take up this work; and complete the unfinished work of writing Krishnarajasagara Hisory as also Bhadra Reservoir and Thunga Bhadra Projects.

After Shri H.D.Rice retired Chief Engineer of Mysore, I am the <u>ONLY ENGINEER</u> who has written and published a book on these Projects:

My book namely KRISHNARAJASAGARA DAM SLUICES" published by Mysore Government has been highly appreciated by

Sri U.Ananda Rao, I.S.E., C.E. for Irrigation, Madras(Retd)
Sri L.Venkatakrishna Iyer,ISE., ...do.. Andhra Pradesh(Rtd
Sri B.P.Saxena I.S.E., Director of Utilisation of Reserves Uttar Pradesh (Retd.,)
Sri M.Narasimhia, B.A.,B.E.,Chief Engineer, Mysore (Retd.)
Sri D.V.Rao, B.E., ...do.... Hyderabad (Retd.)
Sri A.K.Char, B.Sc.,B.E., ...do.... Chambal (Retd.)

(i) The Central Board of Irrigation and Power Journal April 1955 and its abstract July 1955
(ii) The Sunday Standard of 2-10-1955
(iii) Amrita Bazaar Patrika, Calcutta (30-10-55)

(Copy of their opinion with the book is enclosed for your perusal).

(Contd.....P/2)

I am the ONLY ENGINEER now living that has worked in the construction and Maintenance of Krishnarajasagara Dam and Channels for over 20 years and consequently has more PERSONAL KNOWLEDGE of these Projects than anyone else living now.

I, therefore, request you to kindly recommend to Government to entrust this work of writing history of the State Projects to me by employing me as Special Officer of the rank of a Chief Engineer on contract for a period of 3 years.

With Kind Regards,

Yours Sincerely,

Sd/-
(M.C.Sampath Iyengar)

'Copy'

KRISHNARAJASAGARA DAM SLUICES

OPINIONS OF

1. Shri U.Ananda Rao, I.S.E., Chief Engineer for Irrigation, Madras State.
2. Shri L.Venkatakrishna Ayyar, I.S.E., Special Chief Engineer, for Irrigation, Andhra State, Kurnool.
3. Shri B.P.Saxena, I.S.E., Director of Utilisation of Resources, Uttar Pradesh.
4. Shri A.K.Char, B.Sc.,B.E., Chief Engineer, Chambal Hydel & Irrigation Scheme, (PO) Chambal Hydel works.
5. Shri D.V.Rao,B.E., Chief Engineer, P.W.D. Irrigation Projects, Hyderabad State.
6. Rajaseva Sakta M.Narasimhaiya, B.A.,B.E., Chief Engineer(Retd) Mysore.
7. Central Board of Irrigation and Power Journal (India), April, 1955 and Abstract July, 1955.
8. Sunday Standard, dated 2nd October, 1955.
9. Amrita Bazar Patrika, Calcutta, dated 30th October, 1955.

-oOo-

SHRI U.ANANDA RAO, I.S.E., CHIEF ENGINEER FOR IRRIGATION, MADRAS STATE.

The Mysore Government have published a book entitled "Krishnarajasagar Dam Sluices" which is very informative and useful for reference in Designing Sluices in High Dam.

-oOo-

SHRI L.VENKATAKRISHNA AYYAR, I.S.E., SPECIAL CHIEF ENGINEER FOR IRRIGATION, ANDHRA STATE, KURNOOL.

"The Mysore Government have published a book entitled "KRISHNARAJASAGAR DAM SLUICES" which is very informative and useful for reference in Designing sluices in High Dams. Executive Engineers and Superintendings Engineers are permitted to purchase copies of the Book for their libraries."

-oOo-

SHRI B.P.SAXENA, I.S.E., DIRECTOR OF
UTILISATION OF RESOURCES,
UTTAR PRADESH.

"A book has been published by Sri M.C.Sampat Iyengar of Mysore Government named "Krishnarajasagar Dam Sluices The book discusses in detail calculations and functions of various types of sluices, their faults and their good points and is likely to be very useful in dealing with sluices and gates in general. It is suggested that copies of the book may please be obtained for your Library from Sri M.C. Sampat Iyengar, B.E.,".

-oOo-

SHRI A.K.CHAR, B.Sc.,B.E., CHIEF ENGINEER,
CHAMBAL HYDEL & IRRIGATION SCHEME,
(PO) CHAMBAL HYDEL WORKS.

"The Mysore Government have published a book entitled "Krishnarajasagar Dam Sluices" which is very informative and useful for reference in designing sluices in High Dams."

-oOo-

SHRI D.V.RAO, B.E., CHIEF ENGINEER,
P.W.D. IRRIGATION PROJECTS,
HYDERABAD STATE.

"Shri M.C.Sampat Iyengar, B.E., Retired Engineer of Mysore State has published a book entitled "Krishnarajasagar Dam Sluices" which is informative and very useful for reference for designing sluices".

-oOo-

RAJASEVASAKTA M.NARASIMHAIYA, B.A.,B.E.,
CHIEF ENGINEER (RETIRED), MYSORE.

" I have read with considerable interest your book on the sluices of Krishnarajasagar Dam and I would express that lotof pains have been taken over it and the compilation and the get up are very good."

-oOo-

CENTRAL BOARD OF IRRIGATION & POWER
JOURNAL (INDIA)
(April, 1955)

"The Krishnarajasagar Dam is one of the earliest important dams to be constructed in India. It is 8,600 feet long, 130 feet high above river bed and has a storage depth of 124 feet at full reservoir level and a capacity of 43,934 million cubic feet above sill of irrigation sluices. The dam is a non-overflow gravity type and has sluices built in it for the disposal of floods and regulating irrigation supply. These sluices numbering 171 of different sizes at various levels are operated by three types of gates, viz., (1) stoneys' free-roller type, (2) steel gates of Escher Wyss and company and (3) cast iron gates supplied by the Mysore Iron and Steel Works, Bhadravati.

The author who has been associated with the work in the dam for more than twenty yeas has dealt in this book with the different types of gates with the object of providing useful information in the future designing of the gates and their maintenance in works similar to that of Krishnarajasagar Dam.

The book presents the experiences of the gates installed and the recommendations to overcome the several problems confronted both during erection and maintenance. A thorough study of all the gates erected has been made and the alterations needed in the designs on the basis of the study have also been dealt with

The book is published by the Government Press, Bangalore, 1952, pp.184. Price Rs.15/- and copies available from the author.

-oOo-

ABSTRACT FROM THE CENTRAL BOARD OF IRRIGATION AND POWER, (JULY, 1955).

"404. Krishnarajasagar Dam Sluices: M.C.Sampat Iyengar (Published by the Government Press, Bangalore, 1952, pages 184) deals with the different type of sluice gates installed in the

Krishnarajasagar Dam, studies made regarding the behaviour of gates installed and gives recommendations to overcome the several problems confronted both during erection and maintenance. Capital cost of the gates and their cost of maintenance have also been dealt with.

-ooo-

"SUNDAY STANDARD"
Dated 2nd October, 1955.
DAM SLUICES

"Krishnarajasagar Dam Sluices by Sri M.C.Sampat Iyengar,B.E. pp.184. Published by the Director of Printing, Stationery and Publications, Bangalore, Price Rs.15/-.

The publication describes the types of shutters installed on the dam works, their working and defects and some of the remedial measures taken to overcome the defects in operating the shutters. The author who was connected with these works for a number of years has used his experience in compiling the book for the benefit of those who may have to deal with similar types of shutters.

The book contains 12 chapters with a number of plate diagrams and photo illustrations.

Chapter I is introductory giving general details of the Dam and its component works. The second chapter gives details of the scouring sluices and their shutter types, chiefly the "Stoney's Free Roller Type." The next chapter enumerates the troubles experienced with the scouring sluices and furnishes details of maintenance. Chapter IV contains a description of the 'Curtain and Crane'. Chapter VI is devoted to the Irrigation Sluices. Flood Disposal and surplus sluices are dealt within the next chapter, including the design of gates and description and action of the 'Automatic Gate Shutters' invented by Sir M.Visvesvaraya. Chapter VIII details troubles experienced with flood disposal and the surplus sluices. Chapter IX relates to Turbine

Sluices, and Chapter X furnishes cost of installation of sluice gates, while the next chapter pertains to their maintenance. The last chapter discusses the suitability of the types described in the book and sums up the author's experiences of them.

Tables of sluice co-efficients as determined, for the various types are a valuable addition to the book. The volume also contains two appendices and an index.

The publication is likely to interest the readers who wish to know the details of working and defects of the sluice gates, and their cost of erection and maintenance."

-oOo-

AMRITA BAZAR PATRIKA,
CALCUTTA.
Sunday, the 30th October,1955.

"The description is aided by 40 drawings of various sluice shutters and their parts, besides half-a-dozen sketches, photos and maps.

It is a book which every irrigation, power and mechanical engineer, and contractor should have in his library for use as a reference book."

-oOo-

T E C H N I C A L Q U A L I F I C A T I O N S

and

DESCRIPTION OF WORKS EXECUTED

by

Shri M. C. SAMPAT IYENGAR, B.E.

in

R I V E R V A L L E Y P R O J E C T S

From the year

1922 to 1967

TECHNICAL QUALIFICATIONS and DESCRIPTION of WORKS

Sl. No. (1)	Year (2)	Items of work (3)	TOTAL SERVICE ON Designation (4)
	1921	Qualified for a Guaranteed appointment in Mysore But was not appointed immediately due to reduction	
2.	1922-23:	Period One Year: Nira Right Bank Canal Works (BOMBAY STATE):	UPPER SUB-ORDINATE
3.	1924-27:	Period Three Years: (a) Kapini Reservoir Project. (b) Krishnarajasagara High level canal project. (now called Visweswaraiah Canal).	UPPER SUB-ORDINATE MYSORE P.W.D.
4.	1927-44:	Period ~~Sixteen~~ Seventeen Years: (a) CONSTRUCTION OF:- Krishnarajasagara DAM works. 140 feet above foundation. (b) -do- South end gate way works: (c) Brindavan Gardens. (d) -do- Visweswaraiah CANAL and its branches with maintenance:	ASSISTANT ENGINEER
5.	1944-48:	4(Four Years) (a) Protective works to the Waste Weir of Krishnarajasagara. (b) Hulikere Irrigation water TUNNEL works 9200 feet long and 14 feet wide.	EXECUTIVE ENGINEER
6.	1948-49:	One Year: CONSTRUCTION OF:- a) Hirebhasgar Reservoir DAM Works. b) Jog GENERATING STATION works. c) PENSTOCK pipe works d) Preparation of Sharavati (Honnemaradu) Project.	SUPERINTENDING ENGINEER

EXECUTED by Shri M.C.SAMPAT IYENGAR, B.E., in RIVER VALLEY PROJECTS

MARCH 1967 -- 41½ YEARS.

Personal Responsibilities (5)	Special Remarks (6)
State (service) taking third rank in the B.E. degree examination of establishment in the State, then (of Mysore University.	
A. NIRA RIVER VALLEY, MAHARASHTRA (BOMBAY) STATE:	
Construction of Canal Works.	
B. CAUVERY VALLEY, MYSORE STATE:	
Head of the parties engaged on Survey of the Projects.	
1. Designed and constructed departmentally Krishnarajasagara Waster Weir sluices and gates. 2. Executed within 3 months time by Departmental system the South end gate way works of the dam. 3. Execution of Brindavan Gardens. 4. Designed and built Viswesaraiah Canal and its branch canals and maintained the same.	1. Mysore Government recorded their appreciation of service for the completion of a feeder channel work to Malavalli Tank in record time, during the year 1939 when there was failure of rains and the crops under the tank were withering (vide G.O.No.1182/K.R.S.3166 dated 12.2.1939). 2. -do- to KIRGAVAL TANK. 3. Took Govt.of India patent for an (a)INVENTION OF "AUTOMATIC GATE" (b) INVENTION OF AUTOMATIC PUMP. 4. WRITTEN A TREATISE on Krishnarajasagara sluice. and has been published in book form by Mysore Government.
5. Maintenance of Dam and construction of protective works to the Waster Weir. 6. Construction & maintenance of Hulikere Tunnel works.	
C. SHARAVATHI VALLEY (MYSORE STATE):	
1. Executived and maintained Jog Hydro-electric works. 2. Originated proposals for Sharavati Project for full utilisation of the river resources.	Assessed for the first time the potential resources of Sharavathi Valley and CONCEIVED THE SHARAVATHI PROJECT which is under active construction by Mysore Govt. at present.

Sl. No.	Year (2)	Items of work (3)	Designation (4)
7.	1949-52:	3 Years: CONSTRUCTION OF:- a) Bhadra Reservoir DAM works: 230 feet high above foundation. b) Tunga Anicut 50 feet high above foundation and channel works. TUNNEL across left bank channel 1550 ft. long 10 ft. wide.	SUPERINTENDING ENGINEER
8.	1953-55:	1½ Years: CONSTRUCTION OF a high masonary weir, two 10' diameter TUNNELS, PENSTOCK pipe length and POWER HOUSE.	PROJECT OFFICER
9.	From March 1955: to; Jan 1962	7 YEARS a) Investigation of hydro-electric projects:	SUPERINTENDING ENGINEER (CIVIL & INVESTIGATIONS)
		b) Planning & designing of hydro-electric projects:	
10.	Jan 1962 - Jan 1963	one Year	SPECIAL OFFICER (CIVIL & INVESTIGATIONS)
11.	April 1964 - April 1967	THREE YEARS	*ADVISOR (PLANNING & INVESTIGATIONS of HYDEL PROJECTS). ASSAM STATE ELECTRICITY

Personal Responsibilities (5)	Special Remarks (6)
D. TUNGABHADRA VALLEY (MYSORE STATE):	
1. Organised and successfully diverted Bhadra River and foundation masonary laid in the River bed. 2. Tunga Anicut and channels have almost been completed for allowing water in June, 1953. Constructed on Departmental system. Shimoga CURVED tunnel for the canal. 3. Completed the construction of Budigere tank and channels and feeder channel works from Seegehalla and Kagehalla.	1. Read papers before Mysore Engineer's Association on: a) PLANNING WATER RESOURCES of Mysore State. b) DAM CONSTRUCTION in Mysore State. 2. Attended the World Conference on High Dams held at New Delhi in January 1951 as a delegate from Mysore State. 3. Drained completely the notorious marsh behind Sulekere Tank in Channagiri Taluk of Shimoga District which had not been successfully handled from ages and Govt. were consequently thinking of breaching the tank. SERVICES RENDERED IN THIS CONNECTION HAVE BEEN ACKNOWLEDGED BY THE PUBLIC WORKS DEPARTMENT MINISTER ON THE FLOOR OF THE STATE ASSEMBLY IN NOVEMBER, 1951.
E. UMTRU VALLEY(ASSAM STATE): HYDRO ELECTRIC PROJECT. Organised the work of building weir, two tunnels etc. and pushed it for rapid execution.	APPRECIATION OF WORK done recorded by Chief Minister of Assam State on 3.12.'55 and communicated by Executive Engineer, Umtru Hydel Projec Assam in his letter No.541/-28 dated Burmihat 12.12.'55.
ANDHRA PRADESH HYDRO ELECTRIC PROJECT:	
F. SILERU VALLEY: i) UpperSileru hydro-electric project (First Stage) ii) -do- -do- (Second Stage) iii) Lower Sileru hydro-electric project (both stages)	COMMENDATION for Srisailam Investigation work communicated in CEE's memo No.Adm.Roc.J2/132/60-10 Dt 10.11.60
G. KRISHNA VALLEY: iv) Srisailam hydro-electric project across Krishna River v) Nagarjunasagar -do- -do-	
i) Tungabhadra Hydro-electric project ii) Machkund hydro-electric project.	
H. NELLORE 30 M.W. THERMAL STATION (ANDHRA PRADESH) Design of civil works of power house on pile foundation and also Turbine and Boiler foundations.	
1. Planning hydro-electric projects on tributaries of Brambraputra River of Assam State.	

BOARD

M. C. Sampathkumar

10.9.68

TERMS AND CONDITIONS OF CONTRACT OF SRI.M.C.

SAMPATHIENGAR.

---

1. Name — Writing and getting it printed, history of (a) Krishnarajasagar, (b) Bhadra Reservoir.

2. Designation. — Advisor (Status to be defined as that of Chief Engineer for purposes of T.A)

3. Remuneration. (a) Krishnarajasgar.

The work involves (I) Studying the old records in the offices of the (i) Secretary, P.W.D., (ii) Chief Engineer, Bangalore, (iii) Superintending Engineer, Mysore, (iv) Executive Engineer, Krishnarajasagar, (v) Secretary, Electrical Works, (vi) Chief Electrical Engineer, Bangalore, (vii) Superintending Engineer, Sivasamudram and Shimshapur.

(II) Visiting the works on the river and its scheduled tributaries from its source at Talakaveri to Upper Anecut.

(III) Collection of drawings; statistics and photos of the above;

(IV) Studying the concerned and connected literature in the libraries at Bangalore and other places.

(V) Writing out the report.

(VI) Printing the report after approval by Government.

The above mentioned items are expected to take about 18 months for completion and at the rate of Rs.1,500 per month, my remuneration for the work will be Rs.27,000/-. This is not high, as Govt. have in their letter No.P.W.A. 2-4/KRS 3-54-46 dated 2.4.55 have paid me Rs.11,250 for the treatise on K.R.S. sluice gates, which happens to be only a sub-item of the main work.

(b) Bhadra Reservoir

Since it is learnt that a draft copy is available for this work re-editing and printing is expected to take 6 months. Total period involved: 24 months.

4. Establishment: (i) Technical personel needed should be provided by the officers concerned.

(ii) Ministerial, such as steno-typists etc. should be provided by the officers concerned.

(iii) menial: One attached to me throughout and another provided by the officers concerned for sorting out old records and other duties.

5. Office ac- — (ix) Accomodation to be provided by the

comodation:	Chief Engineer concerned.
6. T.A.	Journeys of self and staff as per Mysore Govt. T.A. Rules.
7. Conveyance.	Chief Engineer concerned to provide a vehicle for movement in Bangalore and for visits to other stations.
8.(a) Stationery, furniture, drawing and mathematical instruments and other equipments needed.	Chief Engineer concerned to provide for the same.
(b) Purchase of books and periodicals and newspapers.	-do-
9. Payment.	Monthly
10. Contingencies.	Chief Engineer concerned to give the necessary imprest for contingent expenditure.
11. Work bills.	Photography and other work bills to be paid the Chief Engineer concerned.
12. Other items.	(a) Without any prejudice to the work, permission should be granted for undertaking other works either inside or outside the State.
	(b) Mysore State pension should be allowed to be drawn as such during the period of the contract.
	(c) On the successful and satisfactory conclusion of the work, a bonus or gratuity of Rs.5,000/- to be paid.
	(d) To be permitted to be subscribe to the G.P.F. to obtain in income-tax relief.
	(e) Telephone bills of my residential telephone are to be paid by Government during the period of the contract.

18.10.68

Phone: 3190.
M. C. SAMPATHIENGAR, B.E.,
ADVISER, PLANNING AND INVESTIGATIONS
ASSAM STATE ELECTRICITY BOARD

22

9, Fifth Main Road,
Malleswaram, Bangalore-3.

10th October 1968.

Respected Sir,

Subject: Writing of history of big irrigation and power projects of the country with a view to increasing employment opportunities for engineers.

I have been informed by Shri. K.G.R. Iyer, Joint Secretary, Ministry of Irrigation and Power, New Delhi in his D.O.No.2(19)/68 Coord dated 24/25 July 1968 as under:-

S/c Chief Minister
K. LAKK... 12/11/68
Min. for Public Works

"..... For your information, I might mention that recently we have addressed the State Governments requesting them to consider the question of taking up this work which will also provide some employment opportunities for unemployed engineering graduates and diploma holders."

You may kindly correspond on the subject direct with the State Government....."

I am accordingly submitting this for your kind consideration and wish to add that,

(1) I have stood THIRD in order of merit in the B.E.Degree examination of Mysore University in the year 1921.

(2) I have served with DISTINCTION for nearly 42 years in the Public works and Electricity Departments of the states of Bombay, Mysore, Andhra Pradesh and Assam, as under:-

	State	Designation	Period	Remarks.
a.	Bombay.	Jr. Engineer	1 year.	
b.	Mysore	Asst. Engineer to Superintending Engineer.	28 years.	Services appreciated by Govt. THRICE

...2

	State	Designation	Period	Remarks
c.	Andhra Pradesh.	Special Officer.	8 years.	Service appreciated by Govt. ONCE
d.	Assam	Project Officer & Advisor (Civil)	4½ Years	-do- ONCE

A copy of the pamphlet giving the description of the nature of the work done in the above mentioned states is enclosed herewith for your kind perusal.

(3) For writing the history of irrigation and power projects of Mysore State my qualifications are given below.

(a) After Shri H.D. Rice, retired Chief Engineer of Mysore, I am the ONLY ENGINEER who has written and published a book on one of these projects.

(b) My book namely "KRISHNARAJASAGARA DAM SLUICES" has been published by Mysore Government in the year 1952 and is highly appreciated by:-

Shri U.Ananda Rao, I.S.E., C.E. for Irrigation, Madras state (Retirdd)
" L.Venkatakrishna Iyer, I.S.E.,-do- Andhra Pradesh (Retd)
" B.P.Saxena, I.S.E. Director of utilisation of Reserves Uttar Pradesh (Retd).
" M.Narasimhiah, B.A.,B.E. Chief Engineer, Mysore (Retd).
" D.V.Rao, B.E., Chief Engineer (Hyderabad) Retd.
" A.K.Achar, B.Sc.,B.E., Chief Engineer, Chambal (Retd)

and reviewed by:

(i) The Central Board of Irrigation and Power journal April 1955 and its Abstract July 1955.
(ii) Sunday Standard of 2.10.1955.
(iii) Amrita Bazaar Patrika -Calcutta (30-10-55)
(Copy of their opinions with the book is enclosed for kind perusal).

...3

(c) I am the ONLY ENGINEER now living that has worked in the construction and maintenance of Krishnarajasagar Dam and channels, Bhadra Reservoir and Channels and planning the gigantic Sharavati Project in 1949 and consequently has more PERSONAL KNOWLEDGE of these projects than any one else living now.

I request you to kindly employ me as Advisor or so on contract for a period of 3 years and entrust the work of writing the history of Irrigation and Power projects of Mysore State, in addition to other duties.

With best regards,

Encl:- Two.

Yours sincerely,

M.C. Sampathiengar

(M.C.Sampathiengar).

To

Shri K.Lakkappa,
Hon'ble Minister for Public Works,
Government of Mysore,
Bangalore-1.

-1-

KRISHNARAJASAGAR DAM SLUICES"

OPINIONS OF.

1. Shri U.Ananda Rao, I.S.E., Chief Engineer for Irrigation, Madras State.
2. Shri L.Venkatakrishna Ayyar, I.S.E., Special Chief Engineer, for Irrigation, Andhra State, Kurnool.
3. Shri B.P.Saxena, I.S.E., Director of Utilisation of Resources, Uttar Pradesh.
4. Shri A.K.Char, B.Sc.,B.E., Chief Engineer, Chambal Hydel & Irrigation Scheme, (PO) Chambal Hydel works.
5. Shri D.V.Rao,B.E., Chief Engineer, P.W.D. Irrigation Projects, Hyderabad State.
6. Rajaseva Sakta M.Narasimhaiya, B.A.,B.E., Chief Engineer(Retd) Mysore.
7. Central Board of Irrigation and Power Journal (India), April, 1955 and Abstract July, 1955.
8. Sunday Standard, dated 2nd October, 1955.
9. Amrita Bazar Patrika, Calcutta, dated 30th October, 1955.

-oOo-

SHRI U.ANANDA RAO, I.S.E., CHIEF ENGINEER FOR IRRIGATION, MADRAS STATE.

The Mysore Government have published a book entitled "Krishnarajasagar Dam Sluices" which is very informative and useful for reference in Designing Sluices in High Dam.

-oOo-

SHRI L.VENKATAKRISHNA AYYAR, I.S.E., SPECIAL CHIEF ENGINEER FOR IRRGATION, ANDHRA STATE, KURNOOL.

"The Mysore Government have published a book entitled "KRISHNARAJASAGAR DAM SLUICES" which is very informative and useful for reference in Designing sluices in High Dams. Executive Engineers and Superintendings Engineers are permitted to purchase copies of the Book for their libraries

-oOo-

SHRI B.B.SAXENA, I.S.E., DIRECTOR OF
UTILISATION OF RESOURCES
UTTAR PRADESH.

"A book has been published by Sri M.C.Sampat Iyengar of Mysore Government named "Krishnarajasagar Dam Sluices' The book discusses in detail calculations and functions of various types of sluices, their faults and their good points and is likely to be very useful in dealing with sluices and gates in general. It is suggested that copies of the book may please be obtained for your library from Sri M.C. Sampat Iyengar, B.E.,".

-oOo-

SHRI A.K.CHAR, B.Sc.,B.E., CHIEF ENGINEER,
CHAMBAL HYDEL & IRRIGATION SCHEME,
(PO) CHAMBAL HYDEL WORKS.

"The Mysore Government have published a book entitled "Krishnarajasagar Dam Sluices" which is very informative and useful for reference in designing sluices in High Dams."

-oOo-

SHRI D.V.RAO, B.E., CHIEF ENGINEER,
P.W.D. IRRIGATION PROJECTS,
HYDERABAD STATE.

"Shri M.C.Sampat Iyengar, B.E., Retired Engineer of Mysore State has published a book entitled "Krishnarajasagar Dam Sluices" which is informative and very useful for reference for designing sluices"

-oOo-

RAJASEVASAKTA M.NARASIMHAIYA, B.A.,B.E.,
CHIEF ENGINEER (RETIRED), MYSORE.

" I have read with considerable interest your book on the sluices of Krishnarajasagar Dam and I would express that lottof pains have been taken over it and the compilation and the get up are very good."

-oOo-

CENTRAL BOARD OF IRRIGATION & POWER
JOURNAL (INDIA)
(April, 1955)

"The Krishnarajasagar Dam is one of the earliest important dams to be constructed in India. It is 8,600 feet long, 130 feet high above river bed and has a storage depth of 124 feet at full reservoir level and a capacity of 43.934 million cubic feet above sill of irrigation sluices. The dam is a non-overflow gravity type and has sluices built in it for the disposal of floods and regulating irrigation supply. These sluices numbering 171 of different sizes at various levels are operated by three types of gates, viz., (1) stonevs' free-roller type, (2) steel gates of Escher Wyss and company and (3) cast iron gates supplied by the Mysore Iron and Steel Works, Bhadravati.

The author who has been associated with the work in the dam for more than twenty years has dealt in this book with the different types of gates with the object of providing useful information in the future designing of the gates and their maintenance in works similar to that of Krishnarajasagar Dam.

The book presents the experiences of the gates installed and the recommendations to overcome the several problems confronted both during erection and maintenance. A thorough study of all the gates erected has been made and the alterations needed in the designs on the basis of the study have also been dealt with.

The book is published by the Government Press, Bangalore, 1952, pp.184, Price Rs.15/- and copies available from the author.

-oOo-

ABSTRACT FROM THE CENTRAL BOARD OF IRRIGATION AND POWER, (JULY, 1955).

"404. Krishnarajasagar Dam Sluices: M.C.Sampat Iyengar (Published by the Government Press, Bangalore, 1952, pages 184) deals with the different type of sluice gates installed in the

Krishnarajasagar Dam, studies made regarding the behaviour of gates installed and gives recommendations to overcome the several problems confronted both during erection and maintenance. Capital cost of the gates and their cost of maintenance have also been dealt with."

-oOo-

"SUNDAY STANDARD"
Dated 2nd October, 1955.
DAM SLUICES.

"Krishnarajasagar Dam Sluices by Sri M.C.Sampat Iyengar,B.E. pp.184, Published by the Director of Printing, Stationery and Publications, Bangalore, Price Rs.15/-.

The publication describes the types of shutters installed on the dam works, their working and defects and some of the remedial measures taken to overcome the defects in operating the shutters. The author who was connected with these works for a number of years has used his experience in compiling the book for the benefit of those who may have to deal with similar types of shutters.

The book contains 12 chapters with a number of plate diagrams and photo illustrations.

Chapter I is introductory giving general details of the Dam and its component works. The second chapter gives details of the scouring sluices and their shutter types, chiefly the "Stoney's Free Roller Type." The next chapter enumerates the troubles experienced with the scouring sluices and furnishes details of maintenance. Chapter IV contains a description of the 'Curtain and Crane'. Chapter VI is devoted to the Irrigation Sluices. Flood Disposal and surplus sluices are dealt within the next chapter, including the design of gates and description and action of the Automatic Gate Shutters' invented by Sir M.Visvesvaraya. Chapter VIII details troubles experienced with flood disposal and the surplus sluices. Chapter IX relates to Turbine

Sluices, and Chapter X furnishes cost of installation of sluice gates, while the next chapter pertains to their maintenance. The last chapter discusses the suitability of the types described in the book and sums up the author's experiences of them.

Tables of sluice co-efficients as determined, for the various types are a valuable addition to the book. The volume also contains two appendices and an index.

The publication is likely to interest the readers who wish to know the details of working and defects of the sluice gates, and their cost of erection and maintenance."

-oOo-

AMRITA BAZAR PATRIKA,
CALCUTTA.
Sunday, the 30th October,1955.

"The description is aided by 40 drawings of various sluice shutters and their parts, besides half-a-dozen sketches, photos and maps.

It is a book which every irrigation, power and mechanical engineer, and contractor should have in his library for use as a reference book."

-oOo-

T E C H N I C A L Q U A L I F I C A T I O N S

and

DESCRIPTION OF WORKS EXECUTED

by

Shri M. C. SAMPAT IYENGAR, B.E.

in

R I V E R V A L L E Y P R O J E C T S

From the year

1922 to 1967

TECHNICAL QUALIFICATIONS and DESCRIPTION of WORKS

TOTAL SERVICE ON

Sl. No. (1)	Year (2)	Items of work (3)	Designation (4)
1.	1921	Qualified for a Guaranteed appointment in Mysore. But was not appointed immediately due to reduction	
2.	1922-23:	Period One Year: Nira Right Bank Canal Works (BOMBAY STATE):	UPPER SUB-ORDINATE
3	1924-27:	Period Three Years: (a) Kapini Reservoir Project (b) Krishnarajasagara High level canal project. (now called Visweswaraiah Canal).	UPPER SUB-ORDINATE MYSORE P.W.D.
4.	1927-~~44~~ Seventeen:	Period ~~Eighteen~~ Years: (a) CONSTRUCTION OF:- Krishnarajasagara DAM works. 140 feet above foundation. (b) -do- South end gate way works: (c) Brindavan Gardens. (d) -do- Visweswaraiah CANAL and its branches with maintenance:	ASSISTANT ENGINEER
5.	1944-48:	4(Four Years) (a) Protective works to the Waste Weir of Krishnarajasagara. (b) Halikere Irrigation water TUNNEL works 9200 feet long and 14 feet wide.	EXECUTIVE ENGINEER
6.	1948-49:	One Year: CONSTRUCTION OF:- a) Hirebhasagar Reservoir DAM Works. b) Jog GENERATING STATION works.) PENSTOCK pipe works) Preparation of Sharavati (Honnemaradu) Project.	SUPERINTENDING ENGINEER

EXECUTED by Shri M.C.SAMPAT IYENGAR, B.E., in RIVER VALLEY PROJECTS

MARCH 1967 -- 41½ YEARS.

Personal Responsibilities (5)	Special Remarks (6)

State (service) taking third rank in the B.E. degree examination of establishment in the State, (of Mysore University.

A. NIRA RIVER VALLEY, MAHARASHTRA (BOMBAY) STATE:

Construction of Canal Works.

B. CAUVERY VALLEY, MYSORE STATE:

Head of the parties engaged on Survey of the Projects.

1. Designed and constructed departmentally Krishnarajasagara Waster Weir sluices and gates.
2. Executed within 3 months time by Departmental system the South end gate way works of the dam.
3. Execution of Brindavan Gardens.
4. Designed and built Viswesaraiah Canal and its branch canals and maintained the same.

1. Mysore Government recorded their appreciation of service for the completion of a feeder channel work to Malavalli Tank in record time, during the year 1939 when there was failure of rains and the crops under the tank were withering (vide G.O.No.1182/K.R.S.3166 dated 12.2.1939).
2. -do- to KIRGAVAL TANK.
3. Took Govt.of India patent for an (a)INVENTION OF "AUTOMATIC GATE" (b) INVENTION OF AUTOMATIC PUMP.
4. WRITTEN A TREATISE on Krishnarajasagara sluice and has been published in book form by Mysore Government.

5. Maintenance of Dam and construction of protective works to the Waster Weir.
6. Construction & maintenance of Hulikere Tunnel works.

C. SHARAVATHI VALLEY (MYSORE STATE):

1. Executived and maintained Jog Hydro-electric works.
2. Originated proposals for Sharavati Project for full utilisation of the river resources.

Assessed for the first time the potential resources of Sharavathi Valley and CONCEIVED THE SHARAVATHI PROJECT which is under active construction by Mysore Govt. at-present.

Sl. No.	Year (2)	Items of work (3)	Designation (4)
7.	1949-52:	THREE ~~3½~~ Years: CONSTRUCTION OF:- a) Bhadra Reservoir DAM works: 230 feet high above foundation. b) Tunga Anicut 50 feet high above foundation and channel works. TUNNEL across left bank channel 1550 ft. long 10 ft. wide.	SUPERINTENDING ENGINEER
8.	1953-55:	1½ Years: CONSTRUCTION OF a high masonary weir, two 10' diameter TUNNELS, PENSTOCK pipe length and POWER HOUSE.	PROJECT OFFICER.
	From March 1955: to; Jan 1962	7 Years	SUPERINTENDING ENGINEER (CIVIL & INVESTIGATIONS)
		a) Investigation of hydro-electric projects:	
		b) Planning & designing of hydro-electric projects:	
10.	Jan 1962 - Jan 1963.	One Year.	SPECIAL OFFICER (CIVIL & INVESTIGATIONS)
11.	April 1964 - April 1967.	3 years.	ADVISOR (PLANNING & INVESTIGAT of HYDEL PROJECTS Assam State Electricity Board

Personal Responsibilities (5)	Special Remarks (6)
D. TUNGABHADRA VALLEY (MYSORE STATE):	
1. Organised and successfully diverted Bhadra River and foundation masonary laid in the River bed. 2. Tunga Anicut and channels have almost been completed for allowing water in June, 1953. Constructed on Departmental system. Shimoga CURVED tunnel for the canal. 3. Completed the construction of Budigere tank and channels and feeder channel works from Seegehalla and Kagehalla.	1. Read papers before Mysore Engineer's Association on: a) PLANNING WATER RESOURCES of Mysore State. b) DAM CONSTRUCTION in Mysore State. 2. Attended the World Conference on High Dams held at New Delhi in January 1951 as a delegte from Mysore State. 3. Drained completely the notorious marsh behind Sulekere Tank in Channagiri Taluk of Shimoga District which had not been successfully handled from ages and Govt. were consequently thinking of breaching the tank. SERVICES RENDERED IN THIS CONNECTION HAVE BEEN ACKNOWLEDGED BY THE PUBLIC WORKS DEPARTMENT MINISTER ON THE FLOOR OF THE STATE ASSEMBLY IN NOVEMBER, 1951.
E. UMTRU VALLEY(ASSAM STATE): HYDRO ELECTRIC PROJECT. Organised the work of building weir, two tunnels etc. and pushed it for rapid execution.	APPRECIATION OF WORK done recorded by Chief Minister of Assam State on 3.12.'55 and communicated by Executive Engineer, Umtru Hydel Projec Assam in his letter No.541/-28 dated Burmihat 12.12.'55.
ANDHRA PRADESH HYDRO ELECTRIC PROJECT:	
F. SILERU VALLEY: i) UpperSileru hydro-electric project (First Stage) ii) -do- -do- (Second Stage) iii) Lower Sileru hydro-electric project (both stages)	COMMENDATION for Srisailam Investigation work communicated in GEE's memo No.Adm.Roc.J2/132/60-10 Dt. 10.11.60
G. KRISHNA VALLEY: iv) Srisailam hydro-electric project across Krishna River v) Nagarjunasagar -do- -do-	
i) Tungabhadra Hydro-electric project ii) Machkund hydro-electric project.	
H. NELLORE 30M.W. THERMAL STATION (ANDHRA PRADESH) Design of civil works of Power House on pile foundation and also Turbine and Boiler foundations.	
I. Planning hydro-electric projects on tributaries of Brahmaputra River of Assam State.	

Yours Sampathiengar

27.9.68

pw/536 MM/968.

5

Immediate

No. 15-1/68-TM&S
Government of India
Central Water & Power Commission
(Water Wing)

Bikaner House, New Delhi-11,
Dated the 12th November, 1968.

SECRETARY TO GOVERNMENT ... 1968 ... PUBLIC WORKS & ELECTRICITY DEPT.

The Secretary to the
Government of Mysore,
Public Works & Electricity Deptt.,
B A N G A L O R E

Subject:-History of major Projects, Irrigation and Power Sector - Preparation of

Reference:-This office No. 15-1/68-TM&S, dated 10.9.1968.

Sir,

— Kind reference is invited to this office letter cited above and you are requested to expedite the information asked for therein so that it may be taken up with the Govt. of India for necessary action.

22-11-68.

R. & I SECTION ... G.E.D. No ...

Yours faithfully,

T Subba Rao 12-11-68
(T. SUBBA RAO)
DEPUTY DIRECTOR
for Chairman, C.W.&.P.Commission.

.....

The previous reference has not been received in the Major Irrigation Section.

P.P. Secy's may please see

PP. Secy

Subject :- as on Page 1 Cf

To,

The Cf (E) Investigation
of Irrigation & Hydro Electric
Projects,
Anand Rao circle,
Bangalore

Sir,

I am directed to forward herewith a copy of letter no. 15-1/68-TM dated 10.9.68 of the Chairman, Central Water & Power Commission on the subject and to request you kindly to forward your remarks regarding organisation of a cell, as suggested therein, urgently for taking further action.

Pages 1 to 6 Cf as enclosure

Yours faithfully,

by

DS(E)

25/11

Subject :- as in Page 35 Cf

To,

The Chairman,
Central Water & Power Commission,
Irrig. Wing,
Govt of India
New Delhi

Sir,

Ref: Your letter no. 15-1/68-TH&S dated 12/14-11-68

I am directed to state that the subject is under consideration in consultation with the CPWD. A reply will be sent to you as early as possible.

Yours

Sd/-

US(I)

Dy.

GOVERNMENT OF MYSORE

No. PWD 36 MMI 68.

MYSORE GOVERNMENT SECRETARIAT,
VIDHANA SOUDHA,

Dated, Bangalore, 28-11-1968.

FROM

The *Secretary to the Government of Mysore*
Public Works & Elecy. Department.

To

The Chairman,
Central Water & Power Commission,
(Water wing),
Government of India,
N E W D E L H I.

Sir,

Sub: History of major Projects, Irrigation and Power Sector - Preparation of -

Ref: Your Letter No.15-1/68-TM&S dated 12/14-11-1968.

- - -

I am directed to state that the subject is under consideration in ~~connection~~ Consultation with the Chief Engineers & ~~xxx~~ reply will be sent to you as early as possible.

Yours faithfully,

ISSUED
Dated 28.11.68

(S.K.Mohan)
Under Secretary to Government,
Public Works Department.

ksp/2711/2.

GOVERNMENT OF MYSORE

No. PWD 36 MMI 68.

MYSORE GOVERNMENT SECRETARIAT,
VIDHANA SOUDHA,

Dated, Bangalore, 28-11-1968.

FROM

The *Secretary to the Government of Mysore*
Public Works & Elecy. Department.

To

The Chief Engineer, Investigation of
Irrigation and Hydro-Electric Project,
Ananda Rao Circle,
Bangalore.

Sir,

Sub: History of Major Projects, Irrigation and Power Sector - Preparation of -

I am directed to forward herewith a copy of letter No.15-1-/68.TM&S dated 10-9-68 of the Chairman, Central Water & Power Commission on the subject and to request you kindly to forward your remarks regarding organisation of a cell, as suggested therein, urgently for taking further action.

Yours faithfully,

(S.K.Mohan)
Under Secretary to Govt.,
Public Works Deptt.

ISSUED
Dated 28.11.68

ksp/2711/2.